CLAIMS

1. A method for calibrating, comprising:

receiving, for each of a plurality of frequencies, an indication of a characteristic sensitivity of a position sensor for placement in a patient;

measuring an actual sensitivity of the position sensor at each of the plurality of frequencies; and

determining, at each of the plurality of frequencies, calibration data indicative of a deviation of the actual sensitivity from the characteristic sensitivity.

2. The method according to claim 1, wherein determining the calibration data at each of the plurality of frequencies comprises calculating by subtraction a difference between the actual sensitivity and the characteristic sensitivity.

3. The method according to claim 1, wherein determining, at each of the plurality of frequencies, the calibration data indicative of the deviation comprises expressing the deviation as a proportion of the characteristic sensitivity.

4. The method according to claim 1, wherein determining, at each of the plurality of frequencies, the calibration data indicative of the deviation comprises representing the deviation in a non-linear manner with respect to the plurality of frequencies.

5. The method according to claim 1, wherein the position sensor includes a plurality of coils, and wherein determining the calibration data, at each of the plurality of frequencies, comprises determining the calibration data for each of the plurality of coils.

6. The method according to claim 1, wherein the position sensor includes at least one coil, and wherein determining the calibration data, at each of the plurality of frequencies, comprises determining the calibration data responsive to an actual gain and a characteristic gain of the coil.

7. The method according to claim 1, wherein the position sensor includes at least one coil, and wherein determining the calibration data, at each of the plurality of

frequencies, comprises determining the calibration data responsive to at least one of: a position of the coil within the position sensor and an orientation of the coil within the position sensor.

8. The method according to claim 1, wherein the position sensor is incorporated in a device for placement within the patient, and wherein determining the calibration data, at each of the plurality of frequencies, comprises determining the calibration data responsive to at least one of: a position of the position sensor within the device and an orientation of the position sensor within the device.

9. The method according to claim 1, comprising storing the calibration data in the position sensor.

10. A method for determining a position, comprising:

placing a position sensor in a patient;

generating one or more fields at one or more respective frequencies;

generating one or more position signals, responsive to the respective fields and a position and an orientation of the position sensor;

retrieving, for at least one of the one or more frequencies, a stored value of a deviation of an actual sensitivity of the position sensor from a characteristic sensitivity of the position sensor;

determining, for the at least one of the one or more frequencies, a correction to the respective position signal, responsive to the respective position signal and the value of the deviation; and

determining the position of the position sensor, responsive to the one or more position signals and the correction.

11. The method according to claim 10, wherein determining the correction, for the at least one of the one or more frequencies, comprises adding the value of the deviation to the respective position signal.

12. The method according to claim 10, wherein the deviation is expressed as a proportion of the characteristic sensitivity, and wherein determining the correction, for the at least one of the one or more frequencies, comprises determining the correction responsive to the respective position signal and the proportion.

13. The method according to claim 10, wherein the deviation is represented in a non-linear manner with respect to the one or more frequencies, and wherein determining the correction, for the at least one of the one or more frequencies, comprises determining the correction responsive to the respective position signal and the value of the deviation represented in the non-linear manner.

14. Apparatus for calibrating a position sensor for placement in a patient, the apparatus comprising:

a test fixture, adapted to hold the position sensor in a known position and orientation;

a plurality of radiator coils, adapted to generate fields at a plurality of frequencies; and

a computer, adapted to:

receive, for each of the plurality of frequencies, an indication of a characteristic sensitivity of the position sensor,

measure an actual sensitivity of the position sensor, responsive to the fields generated at each of the plurality of frequencies, and

determine, at each of the plurality of frequencies, calibration data indicative of a deviation of the actual sensitivity from the characteristic sensitivity.

15. The apparatus according to claim 14, wherein the computer is adapted to determine the calibration data, at each of the plurality of frequencies, by calculating by subtraction a difference between the actual sensitivity and the characteristic sensitivity.

16. The apparatus according to claim 14, wherein the computer is adapted to determine, at each of the plurality of frequencies, the calibration data indicative of the deviation by expressing the deviation as a proportion of the characteristic sensitivity.

17. The apparatus according to claim 14, wherein the computer is adapted to determine, at each of the plurality of frequencies, the calibration data indicative of the deviation by representing the deviation in a non-linear manner with respect to the plurality of frequencies.

18. The apparatus according to claim 14, wherein the position sensor includes a plurality of coils, and wherein the computer is adapted to determine, at each of the plurality of frequencies, the calibration data for each of the plurality of coils.

19. The apparatus according to claim 14, wherein the position sensor includes at least one coil, and wherein the computer is adapted to determine the calibration data, at each of the plurality of frequencies, responsive to an actual gain and a characteristic gain of the coil.

20. The apparatus according to claim 14, wherein the position sensor includes at least one coil, and wherein the computer is adapted to determine the calibration data, at each of the plurality of frequencies, responsive to at least one of: a position and of the coil within the position sensor an orientation of the coil within the position sensor.

21. The apparatus according to claim 14, wherein the position sensor is incorporated in a device for placement in the patient, and wherein the computer is adapted to determine the calibration data, at each of the plurality of frequencies, responsive to at least one of: a position of the position sensor within the device and an orientation of the position sensor within the device.

22. The apparatus according to claim 14, wherein the computer is adapted to store the calibration data in the position sensor.

23. Apparatus comprising a device adapted to be placed into a patient, the device comprising:

a position sensor; and

a memory, which stores calibration data indicative of a deviation, at each of a plurality of frequencies, of an actual sensitivity of the position sensor from a characteristic sensitivity of the position sensor.

24. The apparatus according to claim 23, wherein the device is adapted to be incorporated in an elongate probe.

25. The apparatus according to claim 23, wherein the device is adapted to be incorporated in a capsule, adapted to be placed in the patient.

26. The apparatus according to claim 23, wherein the deviation includes a difference between the actual sensitivity and the characteristic sensitivity, determined using subtraction, and wherein the memory is adapted to store the calibration data indicative of the difference.

27. The apparatus according to claim 23, wherein the deviation is expressed as a proportion of the characteristic sensitivity, and wherein the memory is adapted to store the calibration data indicative of the proportion.

28. The apparatus according to claim 23, wherein the deviation is represented in a non-linear manner with respect to the plurality of frequencies, and wherein the memory is adapted to store the calibration data indicative of the non-linear representation of the deviation.

29. The apparatus according to claim 23, wherein the position sensor comprises at least one coil.

30. The apparatus according to claim 29, wherein the at least one coil comprises a plurality of coils, and wherein the memory is adapted to store, at each of the plurality of frequencies, the calibration data for each of the plurality of coils.

31. The apparatus according to claim 29,

wherein the actual sensitivity of the position sensor is indicative of an actual gain of the coil,

wherein the characteristic sensitivity of the position sensor is indicative of a characteristic gain of the coil, and

wherein the memory is adapted to store the calibration data indicative of a deviation, at each of the plurality of frequencies, of the actual gain from the characteristic gain.

32. The apparatus according to claim 29, wherein the calibration data is indicative of at least one of: a position of the coil within the position sensor and an orientation of the coil within the position sensor.

33. The apparatus according to claim 29, wherein the calibration data is indicative of at least one of: a position of the position sensor within the device and an orientation of the position sensor within the device.

34. Apparatus for position determination, comprising:

a plurality of radiator coils, adapted to generate fields at one or more frequencies;

a device, adapted to be placed into a patient, the device comprising:

a position sensor; and

a memory, adapted to store calibration data indicative of a deviation, at each of a plurality of frequencies, of an actual sensitivity of the position sensor from a characteristic sensitivity of the position sensor,

the position sensor adapted to generate one or more position signals responsive to the respective fields and a position and an orientation of the position sensor; and

circuitry, adapted to:

receive the position signals, and

determine the position of the position sensor, responsive to the position signals and the calibration data.

35. The apparatus according to claim 34, wherein the deviation includes a difference between the actual sensitivity and the characteristic sensitivity, determined using subtraction, and wherein the memory is adapted to store the calibration data indicative of the difference.

36. The apparatus according to claim 34, wherein the deviation is expressed as a proportion of the characteristic sensitivity, and wherein the memory is adapted to store the calibration data indicative of the proportion.

37. The apparatus according to claim 34, wherein the deviation is represented in a non-linear manner with respect to the plurality of frequencies, and wherein the memory is adapted to store the calibration data indicative of the non-linear representation of the deviation.